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THE SCHOOL REVIEW

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SHOULD LANGUAGE STUDIES BE LIMITED IN
SECONDARY SCHOOLS AS THEY ARE, IN THE
INTERESTS OF THE SCIENCES?*

Great as has been the change in the courses of study of college preparatory schools in the last quarter of a century, all students of education would agree that the changes noted during this period are merely prophetic of a greater development that is at hand—an impulse beginning in the university, and working down through the lower strata of educational institutions. Such great awakenings are always from above, and when more than twenty-five years ago Harvard University promulgated its scheme of elective studies a current of influence was started that was destined to revolutionize the conditions of education not only in that ancient seat of learning, but in all other colleges and universities, and also in the secondary schools that feed the higher institutions. This most important incident in the history of higher education in this country discovered to the college one of its chief functions, and assured it of one of its highest prerogatives. To outline and develop courses of study, to exercise leadership and do pioneer service in educational movements is one of the principal avenues whereby the college is to make returns to the community at large for its great endowments and opportunities. To experiment, to prove, and then to disseminate sound educational doctrine is a far higher work for a great educational institution than merely to send forth each year a number of men who have completed its curriculum. So does it

*Read at the International Congress of Secondary Education, Chicago, July, 1893.

prove its wise stewardship of the large bounties it holds in trust. In this way is its duty to the nation honorably met and its essential relation with lower institutions acknowledged. The high censorship in educational matters, so necessary among a people where there is so little coherent power that commits institutions of similar and different grades to the same wise policy, belongs to the university.

While the different members of our educational body have been far from ideal in their mutual relations, still there has been a sufficiently distinct articulation of the various parts to insure a marked response from all, when the call came from Harvard summoning to a scheme of study that was wisely progressive and safely liberal, and that sought to harmonize educational methods with the actual needs and practical life of this great country, to the end that the college graduate might not become un-American as a result of his college training, but that he might become a better citizen, a wiser guide in the solution of the great problems that are to be presented to us. The great propaganda that was boldly put forth by Harvard a generation ago not only ushered in the dawn of the new education in this country, but it definitely gave the leadership in education to the university and college, and forced secondary schools to follow in a large way the course marked out by the higher institutions. While the secondary school that has individuality, and to be excellent, its personality must be vivid, will always have a curriculum that will mark its identity, still from its very terminology and from its place in the scheme of education it is ever a preparatory school, following in a large degree the lines marked out by the higher institution. To be preparatory, it must do much of its work with full reference to that more advanced life of the scholar into which it seeks to introduce its pupils in the college and university. In other terms the work in the college and university inevitably determines very largely the character of the work in the secondary school. With the intimate relation between the higher and lower institution thus established we draw near the statement of the first reason that compels a re-adjustment of the studies in preparatory schools.

When the writer passed the entrance examinations to Harvard University twenty-one years ago there was one prescribed way of admission, and only one. His preparation was gained in the Cambridge Latin School, confessedly as good a school as sent

boys to Harvard at that time. The requirements were as follows : the merest smattering of Physical Geography, gathered from verbatim recitations from a little manual, the time for which was stolen from the first or last ten minutes of a three-fourth hour recitation in Latin, Greek, or Mathematics. This was the full extent of a boy's *training* in the sciences required for admission to Harvard twenty years ago. To complete the course there were four years' study of Latin, three of Greek, a year's work in the classical history of Greece and Rome, arithmetic through mensuration, algebra through quadratics, and plane geometry. No French, no German, no English, no science, for the requirement in physical geography already referred to cannot be mentioned seriously, except to emphasize with a keen sarcasm the complete absence of all scientific training. This preparation admitted a boy to a college where the elective system was already sufficiently in operation to dominate all of the work of Senior and Junior years, and all but four hours a week of Sophomore year with the exception of three or four themes and forensics a year.

Could the Cambridge High School, which may be fairly regarded a type of the schools of its class, be reasonably called a preparatory school to Harvard University in view of the meagre preparation it gave a boy to make a wise choice and selection of the rich volume of elective studies invitingly spread before him on the university schedule ?

But it is to preparatory schools as they now are that our argument in behalf of an extension of science studies and a limiting of language studies is to be directed. It will be found, however, that this same disparity between preparation for scientific studies and the extensive field opened up to students on entering college, a disparity that amounts not to what is humorously called a "college fit," but to a most distinct misfit, this disparity, I say, that existed twenty years ago has not yet been removed ; for while it is true that schools that pretend to give a boy a thorough preparation for college, a preparation that enables him to do the higher work with ease and profit, while such schools have undoubtedly made large additions to their courses of study in the sciences, still the colleges and universities have vastly developed the area covered by them in these subjects. So that in reality the gap between the amount of science done in secondary schools and colleges to-day is as great as that that existed twenty years ago.

The point urged is this, that in view of the extension of the elective system in the higher institutions, and the remarkable development that has been made and must continue in nature studies, the secondary school cannot be regarded a preparatory school, unless it fits its pupils to enjoy the large privileges offered to them in the sciences by the elective system as it now holds in college and university.

Preparation for the elective system then makes necessary a considerable development of scientific rather than language study in the secondary school. Language studies, the humanities, never to be discarded or ignored, have long held pre-eminent position in the curriculum of the schools. The enormous stimulus that all departments of knowledge have received in this century has been felt most sensibly in the sciences, not only vastly extending the range of human knowledge, but revolutionizing methods of study in all departments.

The elective system, while greatly enlarging the lines along which men may push study and investigation, points for any one student in the direction of specialization. Specialization means centralization, the focusing and massing of the powers of the mind to the prosecution of mental work for which a man has special aptitude. It means to "note well wherein kind nature meant us to excel," and, when we have caught the plain hint from nature, to call into operation all resources, to develop this taste and follow this bent. It is the logical expansion under the great increase of knowledge in these last days of the wise dictum of Ascham, "Small area well cultivated."

Again, a wisely ordered scheme of study will inevitably apply a divining rod to the untouched and unsuspected mental resources of a pupil, because it will be inclusive, and from its very breadth will lie tangent to a greater variety of types of mind.

This is not the folly of saying that any one course of study will create brains where none exist, or touch gross stupidity and warm it into mental life and activity. But it is the experience of every teacher that many a pupil's mind has lain barren and unproductive, though the virgin soil was far from sterile, because the seed has not been sown to which the constitution of his mind was congenial. The elective system gives the needed opportunity to meet the true nature of the student's mind, to touch its dormant powers, to awaken its sleeping life. To put

the mind in motion is the teacher's first duty ; and is it not his highest art ? How inadequate has been the stereotyped curriculum of the past. A just sentence lies against it for its Procrustean rigidity and formal inflexibility. Ample, possibly, to furnish a man for the duties of the restricted and undiversified life of the days of monasticism and the cloister, but woefully deficient to equip him for these days of enormous energies.

The unwisdom of the adjustment between secondary schools and the higher institutions has been among the marked defects in our educational system. This ill-adjustment has been apparent nowhere so much as in the constant expansion of the elective system in the colleges and the rigid holding to the old schemes of the secondary schools.

The lack of coherence between the two kinds of institutions has been glaringly apparent. Latin and Greek have barred the way to a larger and wiser educational career to a degree harmful to different types of mind, and to an extent not required for the retention and cultivation of these languages in school or in college. I instance these two languages because they have historically coerced other lines of study. No indictment can rest against French or German, and much less against our own mother tongue for any such usurpation of the time due the prosecution of other subjects.

I am among those lovers and teachers of the Greek language who feel that its place in any scheme of study that would lead to a liberal and elegant education rests on far more substantial foundations than mere tradition and prescription, and that it will continue, for intrinsic reasons of the greatest value, to educate and train the mind of man as long as studies are a delight and an honor.

That a pupil then may be ready to make choice of the liberal provisions of an elective system, he should be given a wider range for sympathy, taste and aptitude in the preparatory years of his school life ; this amounts to saying in other words, because of the traditional curriculum of the secondary schools, that more room must be made for natural science. To bring this about there must be a pruning of the time devoted to language studies. This adaption of the course of studies in the secondary school to the elective system has been seen to be attended by an advantage of very great value, the earlier opening up of a wider range of

sympathy, taste, and aptitude to the young student, that a teacher may not always be "punishing nature in a scholar," as quaint Thomas Fuller phrases it; but that the pupil may have a better chance to discover what tastes are natural to his mind, and what acquired, through the larger variety of subjects presented to him.

There is a third reason of great value why a larger study of the sciences should find its place in secondary schools at the expense of language studies. This reason is of special pedagogical interest.

The curse of much of the effort in education, whether in secondary school or in college, has been in the past, and still is, that subjects have been so largely taught as mere matter of information. There can be no doubt that it is well to be informed on as many subjects as possible, but it is a truism in pedagogics that information is not training and power. Possibly the reason for this serious fault in educational methods is very largely found in the unpractical and theoretical character of the body of the subjects that have filled up the schemes of study so generally in the past.

The recovery from this fault lies in the prosecution of nature studies. They at once present facts of a different order; phenomena appear; we see, handle, observe, infer, co-ordinate, classify, establish laws, generalize. Immediately we find how silly and inadequate would be any attempt to teach science and explore nature merely to see a fact. Facts present themselves, we note them and do well to remember them, but in the use we make of these facts lies great mental training. Attention, comparison, judgment are stimulated. The highest operations of the mind are called into play; and we find the chief value of facts thus gleaned to be to our minds and to those of our pupils their disciplinary value and not their worth as isolated, disconnected facts. Education is training, discipline. All that trains and disciplines educates. The great value of scientific study is that it induces and compels the alert and quickened sense. Perception is vivid. Language studies may be, can be, nay more, should be taught as disciplinary subjects, but they are not so susceptible to this as science studies are.

So fully are we of the Worcester Academy convinced of the great importance of this fact that we require a full year's work in

laboratory physics of every pupil who would finish our course, whether going to college or not, or to whatever college going. When fathers write us asking whether we "coach" for this college or that, remarking that physics is not required for the college he wishes his son to enter, our uniform reply is that we "coach" for no college and that as far as physics is concerned we are a law unto ourselves. But we discover power in many a boy where it had not been suspected, and equally we find limitations of mind where Latin and Greek had not revealed them. There should be then an enlargement of the sciences as subjects that invite to disciplinary studies rather than to studies of mere information. Then what may have been difficult mental processes become easy and familiar; "lines of least resistance" are established; careful observation, logical deductions and accurate generalization become the habit of the mind by training. The power to observe carefully, to collect facts, make comparison and infer general laws is the highest work of the educated mind. President Hall of Clark University, once humorously spoke of the career of the ordinary college undergraduate as a "four years' exposure to the contagion of a liberal education." There has been a large basis of fact for this witty satire. Much of the occasion for it is due to the character of the studies that have so imperiously controlled the college and school curriculum in the past, and to the unwise methods of instruction that have prevailed by which so many subjects have been taught as information rather than disciplinary subjects. The classics have exercised leadership among the other studies of the schools, but this primacy is hereafter to be shared with other groups of subjects.

There is a still further reason to be found in the very nature of the various sciences which should lead to the enlargement of their place in the schools.

While it is broadly true that the training to which reference has been made should be sought very largely for itself, still there are other reasons that suggest and command training in the sciences that lie outside of the resulting mental discipline, and relate to the use to which specialized study is to be put when the days of student life in school and college are over.

Election and specialization in college should be determined not only by the use to which the student may put his knowledge, in case he himself may in turn become an instructor in his chosen

department, but also by the use which the student may make of his training in the commercial world. Trade, commerce, manufactures, inventions are more and more to require the specialized training of the schools. Schools of technology and the scientific schools of the great universities mean this, and mean this alone ; and the secondary school should be in the line of promoting this application of a wise and thorough study of physical laws and forces to the improvement of the conditions of human life.

In conclusion, the time needed for an expansion of the study of the sciences must come from the languages ; mathematics cannot supply it, for mathematics have received only moderate development in the secondary schools during the past twenty years. Solid geometry is taught in some schools, as is plane trigonometry, but in only a few relatively. The time devoted to them cannot be curtailed, for instruction in the sciences, physics notably, requires all the mathematics a boy can get outside of college as studies are now arranged.

The languages must supply the needed time, and science study should be developed.

D. W. Abercrombie

Worcester Academy, Worcester, Mass. July, 1893.

THE STUDY OF ENGLISH IN SCHOOL AND COLLEGE.

" If a gentleman be to study any language it ought to be that of his own country " was well said by John Locke two hundred years ago. To-day the value of the study of English composition and literature is more fully recognized than ever before. Nevertheless the lamentable confusion which exists with regard to the standards to be reached, and as to practical methods of instruction has thus far rendered the attainment of the best results impossible.

That many of our college youth cannot write their mother tongue with correctness, to say nothing of elegance, will be painfully evident to anyone who takes the trouble to glance over a few pages of a college journal, or to read some of the official documents of college athletic organizations. On the other hand